INTRODUCTION

Night eating syndrome (NES) has recently emerged as a topic of research in the field of eating disorders, however, definitions of "night eating" have varied.¹ Because of cultural and developmental differences in eating patterns, this study as well as others have begun to focus on "nocturnal" eating", defined as waking up from sleep to eat.^{2,3,4} The current literature suggests three areas which are worth exploring in terms of the clinical significance of nocturnal eating. (1) NES has been shown to be associated with binge eating disorder (BED), which may suggest that evening food consumption may be a function of the fact that this time period, as compared to the daytime, affords more time and opportunity for the type of eating associated with BED.⁵(2) Some studies have found a significant correlation between NES and obesity. (3) Night eating has been shown to be associated with psychological distress.⁶ This study examined the clinical significance of nocturnal eating in terms of disordered eating, obesity, and psychosocial functioning.

HYPOTHESES

We hypothesized that nocturnal eating would be associated with: 1. The presence of an eating disorder involving binge eating as the core behavioral symptom, as well as elevated scores on measures of eating pathology, and fewer days when breakfast was consumed.

2. Elevated body mass index (BMI) and prevalence of obesity.

3. Lower self-esteem and social adjustment and elevated levels of depression.

METHODS

Nocturnal eating is defined as waking from sleep to eat one or more times in the past 28 days.

•A total of 348 participants were recruited for an epidemiological study of eating behaviors. Because less than 10% of men reported nocturnal eating, all analyses were based on female participants only (n=285).

•Demographic characteristics such as age, race, highest education level, marital status, and BMI were taken from an initial eating disorder screening questionnaire.

Breakfast, nocturnal eating, and frequency of objective binge episodes (OBE) in the past 28 days were taken from an interview-based eating disorder examination (EDE) following the initial questionnaire.

Eating pathology subscales (EDE-Q) for restraint, eating concern, weight concern, and shape concern, as well as scores for the Beck Depression Inventory (BDI), the Work and Social Adjustment Scale (WSAS), and the Rosenberg Self-Esteem Score (RSES) were taken from a self-report assessment of eating pathology and psychosocial functioning.

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RESULTS

•Demographic characteristics. Nocturnal eaters (NE) did not significantly differ from non-nocturnal eaters (NNE) in terms of age or highest level of education attained. Significantly fewer NE than NNE were white or were married.

•Eating related psychopathology. NE obtained higher scores on three of the four EDE-Q subscales than NNE (Figure 1). More NE (39%) than NNE (20.5%) reported at least one binge episode in the past 28 days (p =.009). The NE group reported eating breakfast on significantly fewer days in the past 28 days (m = 13.56 vs. 19.19, p < .001).

•Obesity. The average BMI of NE (m = 31.69) was higher than that of NNE (m=29.58), though the result was not statistically significant (p=.133). The prevalence of obesity within NE (59.0%) and NNE (42.6%) was not significantly different, though NE showed a general trend toward being more obese (p = .056).

•Psychosocial functioning. Compared to NNE, NE scored higher on depression and lower on social adjustment and on self-esteem (Figure 2).

•Are differences between NE and NNE a function of binge eating? Because of the significant association between NE and binge eating, post-hoc regression analyses examined whether adjusting for binge eating status would eliminate the associations between nocturnal eating and the observed correlates. With the exception of eating concern and shape concern, associations between NE and measures of eating psychopathology and psychosocial adjustment remained significant. BMI was not significantly associated with binge eating status, NE status, or the interaction term.



* = p < .05

** = p < .01



DISCUSSION

NNE=244

NE=41

*** = p <.001

•As predicted, NE demonstrated elevated levels of eating psychopathology on three out of four EDE-Q subscales. Significantly more NE than NNE reported at least one binge eating day or episode in the past 28 days. NE also reported eating breakfast on significantly fewer days than NNE in the past 28 days. Our results suggest that nocturnal eating is related to eating pathology. Prospective studies are needed to determine whether nocturnal eating is a risk factor for or consequence of eating disturbance.

•Though BMI differences and prevalence of obesity between NE and NNE were not statistically significant, the general trend showed that the BMI of NE was higher than that of NNE, and the prevalence of obesity was greater in NE than in NNE. It is possible that our sample was too small to detect small but clinically meaningful group differences. Furthermore, our definition of nocturnal eating did not have a high frequency threshold; it is possible that individuals with regular nocturnal eating episodes might experience weight gain as a result of nocturnal eating.

•As we hypothesized, NE scored higher on depression and lower on social adjustment and self-esteem.

•The post-hoc regressions show that nocturnal eating still remains significant in all the analyses when accounting for binge eating, with the exception of eating concern and shape concern. Since the interaction term was not significant in any of the analyses, the regressions suggest that both binge eating and NE contribute independently to the manifestation of eating psychopathology and poor psychosocial functioning.

FUTURE DIRECTIONS

• Although nocturnal eating is relatively uncommon in the general population, it seems to have important clinical implications, and thus warrants future research.

• Studies including men are needed.

• Because nocturnal eating seems to be associated with eating psychopathology independently of binge eating, future research should look at this as a risk factor for eating disorders.

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